



Minuteman Repeater Association

The Minuteman

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The Minuteman Repeater Association is a non-profit organization providing communications infrastructure and volunteers for community and emergency events.

Membership Meeting: Wednesday, 21 May 2025 ~7:30 - 9:30 pm

10 Worst Antennas for Amateur Radio & How You Can Do Better!

Anthony Luscre - K8ZT

This is a Hybrid meeting: New England Sci-Tech + ZOOM

(Directions to New England Sci-Tech on Page 4)

Members: log into your account on MMRA.ORG to obtain the ZOOM info.

First licensed in 1981 as KA8NRC, Anthony has been a QRP operator from his very first QSO (no one told him Novices should not start with a 2-watt QRP rig). Changed callsign to K8ZT in June 2000 after updating to Extra Class License.

He is active in a variety of Amateur Radio activities, but his favorite activity is operating! Whether it is contesting, DXing or rag chewing, satellites, etc. CW Phone or Digital, the QRP contacts have added up and now top 115,000. First drawn to contesting by his love of working DX, he has consistently finished in the top ten of various major contests and finished first in the World and US in both CQ Worldwide Phone and CW QRP categories multiple times. As a bonus, his QRP DXCC total recently topped the 328 mark, and he has completed 11-band WAS QRP.

Now retired, Anthony's work background includes 20 years as a Medical Technologist working in Clinical Microbiology and private computer consulting and 20 years as a Computer Technology Coordinator, Technology Director (most recently as a Technology Integration Specialist for 30 school districts). His retirement activities include volunteering as a Trainman on the Cuyahoga Valley Scenic Railroad.

Anthony lives with his wife Linda, KA8ODP, near Akron, Ohio. His station is definitely not a super contesting station. His small suburban lot is cramped with a modest array of antennas, proving that you can be competitive in contests without acres of aluminum if you choose your entry category carefully.

Anthony currently serves as ARRL Ohio Section Youth Coordinator. He enjoys sharing his Amateur Radio interests with others by maintaining a website, k8zt.com, writing articles for various publications, including CQ Magazine (column "Ham Radio Explorer,") the DX Engineering blog "On All Bands," and developing an online course, "Introduction to Contesting," for the ARRL. In addition to frequent in-person club presentations pre-COVID, starting during the pandemic, he has done over 400 club presentations and classes virtually in multiple states and countries.

In 2024, Anthony was awarded the Dayton Hamvention Special Achievement Award for his work in presentations to clubs around the world.

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This is our Annual Meeting

**Important information about
votes at our Annual Meeting**

See page 3

President's Corner ~ David Hornbaker, N1DCH

Happy Spring! I hope all your antenna projects are blossoming.

Please plan to attend this month's meeting. It is the MMRA Annual Membership Meeting and Elections. It is important to have a quorum for the elections. If you are unable to attend in person at New England Sci-Tech, you can join the Zoom meeting: log into the MMRA website (www.mmra.org) to find the ZOOM meeting information. Non-Members can email contact@mmra.org for the Zoom information.

In addition to voting for officers and directors, we will also vote on two additional items: 1) Authorize \$5,500.00 to relocate the Quincy repeater, and 2) Renew the \$4000 emergency repair fund. Since 2018, the emergency fund has allowed the board to approve an emergency repair of an existing repeater or other equipment required to maintain the MMRA network.

Following the vote, Anthony Luscre - K8ZT will present "10 Worst Antennas for Amateur Radio & How You Can Do Better"

Join us Tuesday nights at 8:00 PM for our weekly TlaOS net. We'll discuss various HAM topics such as equipment, antennas, software, and repeaters. The main goal is to test repeater link capabilities for emergencies or events like marathons. You can also join via EchoLink. You can find out more information about how and when the repeaters are linked on the website (https://www.mmra.org/repeaters/repeater_linking.html).

Upcoming MMRA Amateur Radio License sessions:

May Session: Saturday, May 10th

June Session: Saturday, June 21st

Both sessions will be at Marlborough Public Library, Meeting Room 1, located at 35 Main Street, Marlborough, MA. Parking is available in the rear at 22 Witherbee Street.

The MMRA VE team will also provide license testing at HamXposition on August 23rd and 24th.

Registration is available at <https://hamstudy.org/sessions/MMRA/all>. Walk-ins are welcome.

Please remember to keep your profile up to date, especially if your email changes. Note that if your callsign changes, send email to contact@mmra.org and we will update your callsign in the database.

73 — Dave — N1DCH

The Amateur's Code ~ Paul M. Segal, W9EEA, 1928

The Radio Amateur is:

CONSIDERATE...never knowingly operates in such a way as to lessen the pleasure of others.

LOYAL...offers loyalty, encouragement and support to other amateurs, local clubs, and the American Radio Relay League, through which Amateur Radio in the United States is represented nationally and internationally.

PROGRESSIVE...with knowledge abreast of science, a well-built and efficient station and operation above reproach.

FRIENDLY...slow and patient operating when requested; friendly advice and counsel to the beginner; kindly assistance, cooperation and consideration for the interests of others. These are the hallmarks of the amateur spirit.

BALANCED...radio is an avocation, never interfering with duties owed to family, job, school or community.

PATRIOTIC...station and skill always ready for service to country and community.

Important Votes during this Annual Meeting

Annual Officer Elections

- President: Dave Hornbaker, N1DCH
- Vice President: John Spencer, WA1MDD
- Secretary: Ken Horton, KA1GFN
- Treasurer: Kevin Paetzold, K1KWP
- Clerk: Stephen Babbitt, KC1LPZ
- Directors to 2027: Roger Coulson, WA1NVC / Bob DeMattia, K1IW

Vote on Quincy Site upgrade: \$5500

Vote on Emergency Repeater Repair Fund: \$4000



MMRA Elmer/Mentor Forum



Ham radio "Elmers" are experienced radio operators who provide mentoring, guidance, and assistance to new and prospective hams, helping them learn the technical aspects of radio operation, regulations, and navigating the social aspects of the ham radio community.

Do you have questions or are you looking for advice or input on:

- how to use your ham radio license
- getting on the air
- buying equipment
- getting your License
- programming your radio
- info about local ham resources
- questions not listed above....

To assist in a robust future for HAM radio the **MMRA** hosts a forum on ZOOM to help answer questions like those above. Everyone is invited whether licensed or not. You do not need to be a member of the **MMRA**.

Elmers are the unsung heroes of ham radio, passing on their knowledge and enthusiasm to the next generation of operators. Whether you have been licensed for weeks or for years you may be able to help answer questions from others.

When: Second Wednesday of each Month at 7:30PM
upcoming 2025 dates: May 14, June 11, July 9, Aug 13

Where: ZOOM Meeting ID: 876 8326 0138 Passcode: elmer
full zoom invite info at mmra.org/elmerforum/elmer_zoominfo.txt



MMRA mmra.org
repeater mmra.org/repeaters/status.htm
info at: mmra.org/repeaters/repeater_index_by_frequency.htm



The MMRA offers free memberships to anyone passing the element 2 (technician) exam in the last 365 days. Send email to contact@mmra.org for more info. MMRA VE/Exam testing schedule available at mmra.org/exam.html.



revised: 20250409

A Perfect Storm: Treasurer's Report ~ Kevin Paetzold, K1KWP

The MMRA receives donations each year. On behalf of the club I would like to acknowledge and thank the following members who have donated since my list in the March newsletter: **N1MSK, KC1WLO, and AA1BA.**

I only count paid memberships (I am after all the treasurer :-). So far **261** members have either renewed or recently joined since September 1, 2024 when the new membership year (2024-2025) started. This is the **25** greater than the 2023-2024 year. As of this writing **44** members who expired on January first have not yet renewed.

The antenna system repairs for the **146.820** repeater cost **\$3200**; \$2863 of that was the climber. That cost was covered by the \$4000 Emergency fund which is annually approved at the May meeting. Some donations I have listed this year were specifically targeted for this repair. This is actually the first time that I have accounted for any emergency fund spending since we invented it several (many) years ago. One of the membership votes at the May meeting is to reallocate \$4000 for an emergency fund for the 2025-2026 fiscal year.

The relocation of the Billerica repeater is well under way. Hopefully by the time you read this article it will be on the air at the new location. The membership previously voted to allocate \$3000 to moving this repeater. About \$1129 was spent on the 220 antenna for the new site. The remaining \$1871 is expected to cover remaining costs (mostly the climber).

I participated in three major work parties at the old Billerica repeater site in the last six months. On April 4 the repeater, the antenna system, and the remaining contents of the enclosure were removed. This was a lot of work and a lot of mass. In physics terms a great deal of potential energy was released :-). Many thanks to AA1HO, K1PRE, K8ZBE, KA1JMC, KB1KTR, KC1URR, KC1US, W1GMM, W1NI, N1UIO, NF1A and of course K1IW. It was really great to see so many members involved and helping.

The membership is being asked to vote on a \$5500 expenditure to relocate the Quincy .67 repeaters. A new site (which is not in Quincy) has been identified and this will hopefully be a done deal soon. One aspect of the new site is that we would not have to pay for power (for ourselves or for the City of Quincy.) At the current rate that would save the club about \$710 a year. At the historical rate before recent excessive power use by the City it would still have been about \$400 at year.

Opportunities like the new proposed repeater site do not come along very often. The community of members using .67 is large. The new repeater site (in combination with .82) may improve the coverage area of the system. I fully support this \$5500 vote.

The last 18 months have been challenging is that we have had to have expensive repairs to one repeater and are having to relocate two other important repeaters at significant cost. MMRA funds balance have/will take a very large hit as a result. On June 1, 2024 we had \$19800. When the Quincy and Billerica relocations are complete I predict we will have less than \$12000.

If we had to spend the whole emergency fund in 2025-2026 we could be down to \$8000. Fortunately we have made many improvements in the hardware that makes up the system in the last several years so I am not expecting any major expenses in the next year or so.

Directions to New England Sci-Tech Inc.

16 Tech Circle

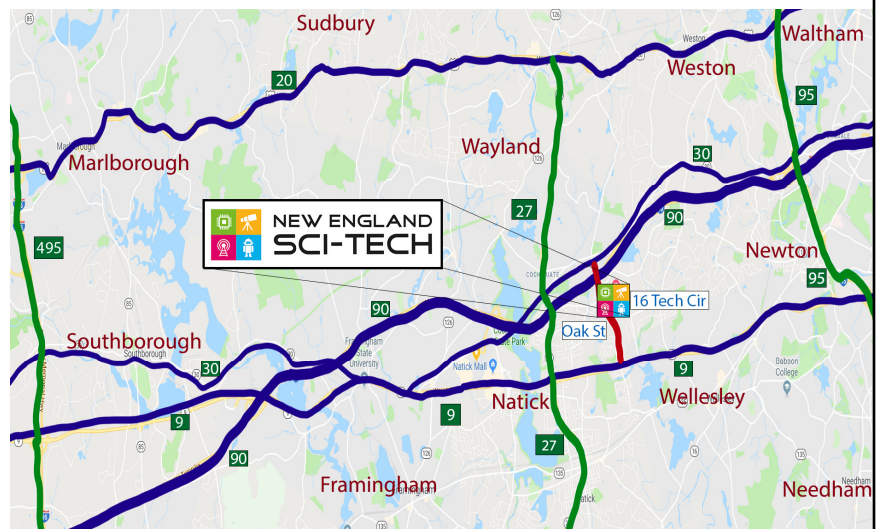
Directions

Natick MA 01760

From the north: take Rt 95 or Rt 27 or Rt 495 south to Route 30 toward Wayland. Once in Wayland, turn South on Oak Street and in 1/2 mile look for Tech Circle on your left. Follow Tech Circle to the end.

From the south: take Rt 95 or Rt 27 or Rt 495 north to Route 9 toward Natick. At the Wellesley-Natick line, turn North on Oak Street and in 1/2 mile look for Tech Circle on your right. Follow Tech Circle to the end.

From the east or west: follow either Rt 30 or Rt 9 toward Natick, turn onto Oak Street at a set of traffic lights, and in 1/2 mile look for Tech Circle. Follow Tech Circle to the end.



MMRA Exam Team (VE) Update ~ David Hornbaker, N1DCH

On March 3rd the MMRA VE team completed its first fully electronic session. We had one candidate who earned her technician ticket: Diana, KC1WMW. Diana got her license because the bird tracking radios she uses requires a license for the UHF radios.

We had some minor issues with getting connected to the library internet, but the session was otherwise uneventful.



Repeater Report ~ Bob DeMattia, K1IW

As Kevin mentioned in his Treasurer's Report, the last few months have been a *perfect storm* of repeater issues and repairs. Here is an update for:

Billerica

The 147.12 Billerica repeater and antenna were removed from its long time site on 4 April along with a lot of other ham stuff. Along with our 224.88 repeater from Burlington it will be reinstalled onto the town of Billerica's water tower on Boston Road. The hardware will be co-located in the town shelter.

There were thirteen people at the work party to help. A lot of people made it much easier. Most of us were there from 9AM until noontime. Four of us worked until 2. At one point there were 8 people on the roof helping take down the antenna.



Many thanks to AA1HO, K1PRE, K8ZBE, KA1JMC, KB1KTR, KC1URR, KC1US, W1GMM, W1NI, N1UIO, and NF1A and K1KWP.

19 March 2025 Membership Meeting ~ Minutes

Called to order @ 7:30PM

Repeater Status Report: - Bob DeMattia – K1IW

Billerica 147.12: New site approved. The repeater will be off the air starting on April 4th as the repeater is moved to the new Billerica site.

Boston Pru -146.82 – The new antenna is installed and is operating.

Lowell – 442.250 - The link radio has issues.

HUB1 -449.925 – The NH link radio is being repaired.

Marlborough – 927.700 – WA1NVC has installed the new P25 capable repeater.

Quincy 2m .67 Repeater The dialog continues with no significant progress. It's highly likely at this point that '67 will be moving to Marlborough. There is a potential possibility the City of Revere may be a suitable location. Exploration of that option is underway by W1NZJ – Michael Dakin, a Revere resident. The MMRA Board of Directors will follow up and support this effort.

Weston – 2m SWR is still high. This Spring an onsite visit is planned.

All other Repeaters: Functioning normally.

MMRA Elmer Forum – Kevin K1KWP – Zoom Sessions

Session 0 – Test/Trial Session –11/13/24 - 2 Participants – 90-minute session

Session 1 – First official session – 12/11/24 – 8 Participants

Session 2 – on 1/8/2025 Many Participants engaged – 90 Minute Discussion

Session 3 – on 2/12/25 Many Participants – 90 Minutes of superb Discussion.

Session 4 – on 3/8/25 – 17 Participation

Including many KC1Vxx calls

A couple of Non-Hams looking to get into the hobby

Session 5 **UPCOMING** on April 9, 2025

Exam Session - March

Saturday, March 22, 2025, at 9:15 AM

Marlborough Public Library, David Meeting Room, 18 Witherbee Street, Marlborough, MA 01752

Please tell your friends, who are interested in taking tests, that they must have photo IDs and FRNs (and please obtain your FRN # from the FCC Website prior to arrival).

Copy of license required if upgrading (or proof from the ARRL or QRZ)

Note: SS#s, are no longer accepted by the FCC. Everyone must have an FRN.

Exam Session - April

Saturday, April 19, 2025, at 9:00 AM

Marlborough Central Fire Station, 215 Maple St (Rte 85), Marlborough MA 01752.

Please tell your friends, who are interested in taking tests, that they must have photo IDs and FRNs (and please obtain your FRN # from the FCC Website prior to arrival).

Copy of license required if upgrading (or proof from the ARRL or QRZ)

Note: SS#s, are no longer accepted by the FCC. Everyone must have an FRN.

19 March 2025 Membership Meeting ~ Continued 2**Upcoming Meetings**

April 9, 2025, 7:30 PM	Elmer/Mentor Forum	Zoom Only (Open to all)
April 16, 2025, 7:30 PM	Business Meeting	Zoom Only
May 14, 2025, 7:30 PM	Elmer/Mentor Forum	Zoom Only (Open to all)
May 21, 2025, 7:30 PM	Annual Elections& Membership Meeting	Hybrid Meeting & Zoom
Location: NE Sci-Tech, Natick MA		
Presentation: 10 Worst Antennas for Amateur Radio & How You Can Do Better		
Anthony Luscre- K8ZT		

Tuesday night 8:00 PM (year-round) Technical Information and Other Stuff Net
MMRA Linked Repeaters

The meeting ended informally at 7:54 PM.

Presentation by Larry Banks – W1DYJ “FT8 - An Update.” Larry was licensed in 1961, as a Novice, KN1VFX, to later become W1DYJ in 1966. Larry currently holds an Amateur Extra class License. He was an engineer and project manager at Hewlett-Packard’s Medical Cardiac lab in Waltham and Andover MA starting in 1969. He holds three degrees in EE from MIT. He spends his time chasing DX and contesting in Woburn, traveling with his wife Maren, and attending – streaming – many jazz and classical concerts. Larry is the Net Manager and Newsletter Editor for the MMRA, publications editor for HamXposition and member of the YCCC

Larry covered the basics of FT8, its brief history and development from WSJT (Weak Signal Joe Taylor) with it initially being a digital form of communication on VHF/UHF before it became popular on HF. FT8 is Single Sideband – Upper sideband to be specific. Larry stressed often throughout this presentation to fully read the documentation on the software and the specific radio that will connect with the computer to use FT8. Where you transmit will be critical to obtain the most optimal amount of contacts and minimize interference with other users nearby. Most important is getting on the basic email reflectors to keep up to date on this evolving digital form of communications. FT8 requires setting your computer’s clock accurately. Check your time by going on <http://time.is>. FT8 is not for hams who want to chat – QSO – because the data exchange with contacts is call sign, signal report and grid location. FT8 is very suitable for reaching out to more distant and unique locations because it is designed for weak signal communication. So far Larry has confirmed a distinct 297 DXCC Entities, many new ones with FT8.

This presentation is available at: https://drive.google.com/file/d/1fBPRrf08kqtrSKK0-MR_bGP9nxVn0OVY/view?usp=sharing

Meeting Attendees at New England Sci-Tech, Natick MA

David Hornbaker, N1DCH; Ken Horton, KA1GFN; Deb Horton, N1NVJ; Larry Banks, W1DYJ; Kevin Paetzold, K1KWP; Bill McIninch, WA1MOM; David Kula, KC1VZH; Bob Phinney, K5TEC

Zoom Meeting Attendees:

Roger Coulson, WA1NVC; Stephen Babbitt KC1LPZ; Bob Evans, N1BE; Christine Shustak, N1AUP; Barbara Irby, KC1KGS; Jim Irby, WB4EJR; Glenn Small, KV1GS; Brian Bodiya, KC1WIH; John Mullaney, K1BOS; Stephen Contrado, KC1VJH; Jim Babb, AA1BA; Claudia Li, KB1UTW; Jonathan Traum, K1BTZ; Kenny Pelusso, KC1PFS; Mike Torchio, N1TOR; Jason Berthelette, KC1UMM

Meeting Adjourned at 9:25PM

Respectfully Submitted by Stephen M Babbitt, KC1LPZ, Clerk

19 March 2025 Membership Meeting ~ Presentation 1

Here are just a few of the slides from Larry, W1DYJ's presentation. The talk is available at:

<https://www.qsl.net/w1dyj/FT8%20for%20web.pdf>

FT8 — An Update Including JTAAlert



Larry Banks, W1DYJ
Licensed: 1961 (N1LVP)
W1DYJ since 1966
Amateur Extra
99 DXCC [196-Cof / 258-WA]
DX Challenge: 1887
88 WAS
6M VUCC (615 grid-GF)
All Low Power

MMRA

March 2025

W1DYJ ~ Larry Banks

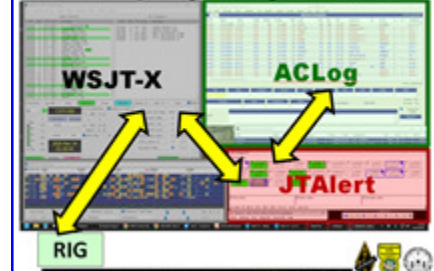
FT8: An Update ~ Agenda

- Basics of WSJT-X & FT8
- HW / SW Setup
- JTAAlert
- W1DYJ results



FT8 ~ An Update ~ MMRA ~ March 2025 ~ Page 1 ~ W1DYJ ~ Larry Banks

Overall Setup ~ My Primary 23" Monitor



FT8 ~ An Update ~ MMRA ~ March 2025 ~ Page 2 ~ W1DYJ ~ Larry Banks

FT8 Basics ~ What Is It???

- A **Weak Signal** semi-automated digital communications mode riding on an **USB RF signal**
- Not for Ragchewing
- It can be "hard" on your rig

FT8 ~ An Update ~ MMRA ~ March 2025 ~ Page 3 ~ W1DYJ ~ Larry Banks

FT8 Basics ~ It's Controversial!

(Disruptive Technology)

FCC Part 97: Advance the communication and technical skills of radio

FT8, FT4, etc. → → RTTY, PSK, etc.

is like CW → → Spark

or SSB → → AM

You will hear some "old-timers" claiming that FT8 QSOs
ARE NOT REAL QSOs!
or that these shouldn't count for DXCC...

FT8 ~ An Update ~ MMRA ~ March 2025 ~ Page 4 ~ W1DYJ ~ Larry Banks

FT8 Basics ~ WSJT [2001]

Weak Signal Joe Taylor

Joe Taylor, K1JT, is a retired Princeton professor and a
Nobel Prize in Physics: (discovered a new type of pulsar)
The original version was intended for

VHF/UHF communication

...and had many modes for different purposes.

FT8 ~ An Update ~ MMRA ~ March 2025 ~ Page 5 ~ W1DYJ ~ Larry Banks

FT8 Basics ~ WSJT-X [2017]

WSJT - **Experimental**

- Added
- JT9 Optimized for the LF, MF, and HF bands
 - QRA64 EME
 - MSK144 Meteor Scatter on the VHF bands
 - WSPR Weak Signal Propagation Reporter: probing potential propagation paths
 - FT8 Targeted multi-hop sporadic E propagation on 6m and higher VHF

The popularity of FT8 on HF is largely a happy accident!

FT8 ~ An Update ~ MMRA ~ March 2025 ~ Page 6 ~ W1DYJ ~ Larry Banks

FT8 Basics ~ Sensitivity

From Joe Taylor, K1JT

Typical S/N (BW = 2500 Hz.):

SSB	+10 dB
CW	+0 → -10 dB
	-15 dB (good radio/ears)
FT8	-21 dB (I often see -24 dB)
WSPR	-31 dB

More sensitive than CW!

FT8 ~ An Update ~ MMRA ~ March 2025 ~ Page 7 ~ W1DYJ ~ Larry Banks

FT8 Basics ~ Technically

Named for:

Steven Franke: K9AN & Joe Taylor: K1JT

An 8 tone - frequency shift keying format (FSK)

[1 baud = 3 bits]

15 Second T/R timing

Tone spacing: 6.25 Hz

50 Hz bandwidth

77 bit word + 14 bit CRC

FT8 ~ An Update ~ MMRA ~ March 2025 ~ Page 8 ~ W1DYJ ~ Larry Banks

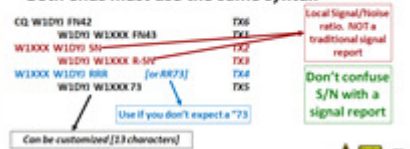
FT8 Basics ~ Operationally

- Very structured syntax
- Maximum of 13 free form characters
- Both ends must use the same syntax
- Absolute minimum info to be "legal" QSO
— call sign / signal report [+grid]

FT8 ~ An Update ~ MMRA ~ March 2025 ~ Page 9 ~ W1DYJ ~ Larry Banks

FT8 Basics ~ Operationally

- Very structured syntax
- Maximum of 13 free form characters (TX5)
- Both ends must use the same syntax



FT8 ~ An Update ~ MMRA ~ March 2025 ~ Page 10 ~ W1DYJ ~ Larry Banks

FT8 Basics ~ Why I do it

- Gave up on PSK years ago
- Tried JT65 - slow!
- FT8 is More Sensitive than CW
 - Important for someone (like me) with MEAGER CW skills and WORSE typing skills
- Makes running barefoot with homebrew antennas viable for DX

FT8 ~ An Update ~ MMRA ~ March 2025 ~ Page 11 ~ W1DYJ ~ Larry Banks

FT8 Setup ~ HW



FT8 ~ An Update ~ MMRA ~ March 2025 ~ Page 12 ~ W1DYJ ~ Larry Banks

FT8 Setup ~ HW

Essentially the same as PSK31 or AFSK RTTY

Rig Setup

Transmitting
→ NO processing, ALC -0, FLAT audio equalization

Receiving
→ NO noise reduction, FLAT response, full SSB BW

→ Let the WSJT-X software do it's thing

FT8 ~ An Update ~ MMRA ~ March 2025 ~ Page 13 ~ W1DYJ ~ Larry Banks

FT8 Setup ~ SW

Read the Fine Manual

RTFM!

You WILL NOT operate FT8 effectively if you don't.
I'm only covering a small portion of the application.

Windows Clock → Meinberg NTP
(or GPS Dongle if no internet)

Check your computer with: "time.is"

FT8 ~ An Update ~ MMRA ~ March 2025 ~ Page 14 ~ W1DYJ ~ Larry Banks

19 March 2025 Membership Meeting ~ Presentation 2

FT8 Setup ~ WSJT-X GUI

Control

Waterfall

FT8 - No Update - 100MHz - March 2025 - Page 10 - W1DYO Larry Banks

FT8 Setup ~ Waterfall

Your Frequencies

Transmit

Current

Listening

Waterfall

Spectrum

Control Panel -> RTFM

FT8 - No Update - 100MHz - March 2025 - Page 11 - W1DYO Larry Banks

FT8 Setup ~ Control

FT8 Setup ~ Control: HOLD TX FREQ

DO NOT CALL on top of someone!!!

To avoid QRM from competing callers, it is usually best to answer a CQ on a different frequency from that of the CQing station. The same is true when you tail-end another QSO. Choose a Tx frequency that appears to be not in use. *From the Fine WSJT-X manual*

FT8 - No Update - 100MHz - March 2025 - Page 12 - W1DYO Larry Banks

FT8 Setup ~ Radio settings: Fake It

Moves the RF and Audio frequencies in opposite directions, resulting in a cleaner transmitted signal. It keeps the Tx audio always in the range 1500 to 2000 Hz, where the audio pass band is flat, and puts audio harmonics above the audio pass band.

FT8 Audio @ 400 Hz.

An Example of VASTLY over modulated and bad harmonic

This ham WAS NOT using FAKE IT!

FT8 - No Update - 100MHz - March 2025 - Page 13 - W1DYO Larry Banks

FT8 Setup ~ Special Call Signs

<...> represents a call Sign that is not yet decoded, or a Call Sign that doesn't fit the specified format.

FT8 - No Update - 100MHz - March 2025 - Page 14 - W1DYO Larry Banks

FT8: An Update ~ JTAAlert

JTAAlert

Integrates with WSJT-X and Provides **Real Time** Audio & Visual Alerts

My personal preference for integrating WSJT with my logger (ACLog from N3FJP)

I know nothing about GridTracker

FT8 - No Update - 100MHz - March 2025 - Page 15 - W1DYO Larry Banks

JTAAlert

Laurie Cowcher, VK3AMA <https://hamapps.com/jtaalert>

Compatible Loggers

- DXKeeper
- ACLog
- Log4OM V1/V2
- HRD Log V4/V5
- Standard ADIF 2.2 file

Real Time Audio & Visual Alerts.

FT8 - No Update - 100MHz - March 2025 - Page 16 - W1DYO Larry Banks

JTAAlert ~ The Windows I Use

CallSigns Window

Control Window

BandHeat Window

FT8 - No Update - 100MHz - March 2025 - Page 17 - W1DYO Larry Banks

JTAAlert ~ CallSigns Windows

CO

73

Subpanels

LoTW flag

New DXCC

Worked 5B

Clicking on a call -> Sets up WSJT-X

Also has Voice Announcements: DX New State Calling You

FT8 - No Update - 100MHz - March 2025 - Page 18 - W1DYO Larry Banks

JTAAlert ~ Alert Types

Audio and visual alerts for several alert conditions

- Your CallSign decoded (someone calling you)
- CQ
- Wanted CallSign
- All below by Band/Mode
- Prefix
- Grid
- US State
- VE Province
- DXCC
- CQ Zone
- Continent
- CQ Marathon

FT8 - No Update - 100MHz - March 2025 - Page 19 - W1DYO Larry Banks

JTAAlert ~ Building Alert dB

Pulls info from your logger to JTAAlert

Setup each alert type

Confirmation Method

Rebuild Alert Database

FT8 - No Update - 100MHz - March 2025 - Page 20 - W1DYO Larry Banks

JTAAlert ~ Some Additional Stuff

Alert Types Summary Window

Setting Badges and Borders

Some CallSign Options

FT8 - No Update - 100MHz - March 2025 - Page 21 - W1DYO Larry Banks

FT8: W1DYO Stats - 2017 -> 2025

DXCC by Band

DX Challenge

DXCC by Band

2017 2020 2025

FT8 - No Update - 100MHz - March 2025 - Page 22 - W1DYO Larry Banks

Some Final Thoughts

- Be sure your computer clock is accurate
- **WINDOWS clock is not!**
- Be aware of different FTx modes:
 - Contests, Fox/Hound, etc.
- **SPLIT is good** [Fake It / Hold TX Freq]
- Don't allow extraneous audio in audio chain
- How much power???
- "Keep received reports to ~ -5 dB (Joe T.)"

FT8 - No Update - 100MHz - March 2025 - Page 23 - W1DYO Larry Banks

16 April 2025 Business Meeting ~ Minutes

Called to order @ 7: 30 PM

May Elections – The discussion boiled down to nominating the same slate of officers and the two Directors whose term expires this year.

President – David Hornbaker, N1DCH

Vice President -John Spencer, WA1MDD

Secretary – Ken Horton, KA1GFN

Treasurer –Kevin Paetzold, K1KWP

Clerk – Stephen Babbitt, KC1LPZ

Director –Bob De Mattia, K1IW

Director – Roger Coulson, WA1NVC

Emergency Fund – A motion was made by Kevin, seconded by Dave to allocate \$4,000 for unexpected event(s) that may arise. The Motion by the Board passed unanimously.

Membership – *each family member's membership will be extended to the expiration date of the family membership.* A motion was made by Kevin, seconded by Dave to eliminate “Family Memberships” and in its place we will provide free membership to individuals under the age of 18 years of age. The motion was passed unanimously by the Board of Directors.

Also voted is a Motion to publish annually in the May MMRA Newsletter a list of members in good standing by callsign. The Motion was passed Unanimously by the Board of Directors.

Treasurer’s Report - Kevin, K1KWP -

For FY 2024-2025 (we are in now) we have 261 paid members, which is a bit better than previous years. We still need help with membership renewals. The current balance is \$19,541. With upcoming expenditures, we will fall below the \$10K threshold.

MMRA Mentoring / Elmer Forum – Kevin, K1KWP

These monthly zoom meeting sessions continue to generate interest. We have had 5 official Elmer sessions. Our April session was hosted by Ken, KA1GFN and our May session will be hosted by Larry, W1DYJ. We want to continue encouraging more participation. The next session will be on May 14th at 7:30 PM. All are welcome.

HamXposition – August 21-24, 2025, in Marlborough

The discussion centered on the ad we are going to purchase for this widely attended event. The decision is to purchase a one-page color ad for \$190. This will contain a map highlighting the locations of our repeaters throughout Eastern Massachusetts. The Board vote was as follows: 5 Yes, 2 No and 2 abstaining.

Raffle Prizes – (HamXposition) The 2nd and 3rd prize items have been donated. The vote concerned what we will spend for the first prize. A maximum of \$150 is authorized which passed unanimously.

Repeater Status Report - Bob DeMattia – K1IW 4/14/25 Status

(Formerly) **Belmont 145.43** –Now installed and operational in Burlington. Duplexer is not providing enough isolation – will need to install additional rejection or reduce transmitter power.

16 April 2025 Business Meeting ~ Continued 2

Quincy 2m .67 Repeater – Continuing to work on a new location. We will need approval for new antennas plus installation costs around \$5,000 (Antennas \$2,400, Install \$2,000 and Coax \$600) Bob is not sure about the coax \$\$ yet. It might be more. (*Editor's addition to minutes: \$5500 moved by Kevin, K1KWP, seconded by Dave, N1DCH, and approved by Board of Directors.*)

Weston – 146.79 – Antenna SWR is still high, but repeater works.

(Formerly) **Burlington – 224.88** -See next notation on Billerica

Billerica 147.12 – Repeater has been removed. It is now in Bob's garage, integrated with 224.88, waiting for a slot in the tower climber's schedule.

Lowell – 442.250 - The link transmitter has begun working again on its own. It is putting a strong signal into HUB1.

All other Repeaters: Functioning normally.

Boston 900 Upgrade – Roger – WA1NVC

- Bring all the pieces except the MSF5000 home.
- Assemble all the pieces and test in the new cabinet.
- Need to discuss logistics of the upgrade, i.e. building access, parking, etc.

Bob has been to that location several times and suggests doing the site visit on a weekend after Roger puts it together at home for testing and burn-in. Hopefully that will be one trip to Boston.

Add AllStarLink Nodes – Dave – N1DCH & Roger – WA1NVC

Add an AllStarLink to HUB1

AllStarLink Node would also support Echolink

Supports multiple ASL and Echolink connections.

Requires 3 ports on Scom- Repeater, ASL and IRLP.

The New Hampshire link radio is using the 3rd port on HUB1.

Roger and Bob discussed a few alternatives:

Cost per node using the Pi4 (not including mixer) is approximately \$201, plus shipping.

Cost using the Pi3 is \$107.

Still using the Pi3 (it needs a controller) the cost is about \$50. Bob suggested Roger try this third less expensive option.

Exam Session - Saturday, April 19, 2025, at 9:00 AM

Online Registration

Walk-Ins Welcome

Marlborough Central Fire Station, 215 Maple St (Rte 85), Marlborough MA 01752.

Please tell your friends, who are interested in taking tests, that they must have photo IDs and FRNs (and please **obtain your FRN#** from the FCC Website **prior to arrival**).

Copy of license required if upgrading (or proof from the ARRL or QRZ).

Note: SS#s, are no longer accepted by the FCC. Everyone must have an FRN.

Newsletter

Information to Larry, W1DYJ

May Edition Deadline: Friday, April25, 2025

Email W1DYJ@mmra.org

16 April 2025 Business Meeting ~ Continued 3

Upcoming Meetings

May 14 2025	7:30 PM	
Elmer/Mentor Forum		Zoom Only (Open to all)
May 21, 2025	7:30 PM	
Annual Meeting		NE Sci-Tech and Zoom
<i>Anthony Luscre, K8ZT: <u>10 Worst Antennas for Amateur Radio & How You Can Do Better</u></i>		
June 11, 2025	7:30 PM	
Elmer/Mentor Forum		Zoom Only (Open to all)
June 18, 2025	7:30 PM	
Business Meeting		Zoom Only
August 24, 2025	12:00 PM	
HamXposition		Royal Plaza Hotel, Marlborough MA
<i>Introduction to MMRA and Raffle</i>		
September 17, 2025	7:30 PM	
Membership Meeting		NE Sci-Tech and Zoom
<i>Anthony Luscre, K8ZT: <u>Technicians, Life Beyond Repeaters</u></i>		
October 15, 2025	7:30 PM	
Business Meeting		Zoom Only
November 19, 2025	7:30 PM	
Membership Meeting		Marlborough Central Fire Station and Zoom
<i>Larry Banks, W1DYJ: <u>Antenna Modeling Part 1— EZNEC</u></i>		
December 17, 2025	7:30 PM	
Business Meeting		Zoom Only
January 21, 2026	7:30 PM	
Membership Meeting		NE Sci-Tech and Zoom
<i>Charles Bures, WA3TR: <u>Introduction to IT-65 & WSPR</u></i>		
February 18, 2026	7:30 PM	
Business Meeting		Zoom Only
March 18, 2026	7:30 PM	
Membership Meeting		NE Sci-Tech and Zoom
<i>George Allison, K1IG: <u>How to Precisely Calibrate Your Transceiver</u></i>		
April 15, 2026	7:30 PM	
Business Meeting		Zoom Only
May 20, 2026	7:30 PM	
Annual Meeting		Location: TBA
<i>David Kula, KC1VZH: <u>A Technician's Journey: From HT to HF</u></i>		
Tuesday night at 8:00 PM (year-round) Technical, information and Other Stuff Net: Linked Repeaters		

Meeting Attendees:

David Hornbaker, N1DCH; Larry Banks, W1DYJ; Kevin W Paetzold, K1KWP; Stephen Babbitt, KC1LPZ; Ken Horton, KA1GFN; Roger Coulson, WA1NVC; John Spencer, WA1MDD; Bob DeMattia, K1IW; Kellye Eversole, K1SOE; Rob Evans, N1BE; David Kula, KC1VZH; Bryan Cerqua, W1BRI; Jim Babb, AA1BA; Joe Fratto, K1UN; Stephen Contrado, KC1VJH

Meeting Adjourned at 10:29PM

Respectfully Submitted by Stephen M Babbitt, KC1LPZ, Clerk

Family & Junior Memberships ~ Ken Horton, KA1GFN

At the April Business Meeting the board voted to eliminate Family memberships. Existing Family memberships have been converted to Individual memberships, with the additional Family members each getting their own Individual membership. The expiration year on those memberships will be the same as the expiration year of the Family membership prior to conversion.

Family memberships are a legacy from when the MMRA only mailed paper newsletters in the mail (printing and postage were expensive). The MMRA now only emails newsletters and family memberships were creating multiple distracting issues and it was chosen to not re-implement.

Previously newsletter notifications and other club reminders were emailed only to the primary member of a Family membership. Additional members under the Family membership did not receive these emails. With the changes to membership, emails will now be sent to all members in good-standing. In addition, all members will now have their own individual profile on the MMRA website.

A Junior membership was also approved for members under 18 years of age. Junior members are eligible for free dues until the age of 18. Eligibility is determined by entering the member's birth year in their MMRA member profile. For 2025, individuals born 2007 or later are eligible and is open to both current and new members.

List of Currently Active MMRA Members ~ Ken Horton, KA1GFN

This is the list of MMRA members as of 30 April 2025. These are the hams that are eligible to vote at the Annual Meeting.

AA1BA	K1KDN	KB1JPL	KC1LNQ	KC1SZF	KC1VHC	KD1CY	N1DFL	NE1RD	W4SBX
AA1FE	K1KWP	KB1JSW	KC1LPZ	KC1TBU	KC1VHD	KD1LV	N1DH	NN1C	W4WR
AA1HO	K1NDG	KB1LY	KC1MAB	KC1TCU	KC1VHJ	KD1MU	N1DKG	NT5SM	W5GI
AA1SH	K1PJW	KB1MAT	KC1MRN	KC1TJX	KC1VHN	KD1TE	N1DLS	NV1W	WA1BEE
AA1VS	K1PRE	KB1MS	KC1MYZ	KC1TLE	KC1VHX	KD1TF	N1FLO	W0MXX	WA1CFX
AB1BP	K1SOE	KB1NIP	KC1MZU	KC1TNT	KC1VJH	KD4VYJ	N1GLE	W1AKM	WA1DX
AB1HO	K1THE	KB1OQA	KC1NBN	KC1TPP	KC1VJL	KE4OZD	N1GWY	W1ATO	WA1MCS
AB1II	K1THF	KB1OTQ	KC1NJO	KC1TTL	KC1VKP	KE9CVI	N1HAN	W1BFM	WA1MDD
AB1LD	K1UN	KB1UGP	KC1NYR	KC1TTM	KC1VMG	KF1KI	N1HBR	W1BP	WA1NVC
AB1LF	K1VEA	KB1VXY	KC1OCY	KC1TTP	KC1VMJ	KG7MAJ	N1IBB	W1BRI	WA1WDQ
AB1PH	K1Vfy	KB1WAL	KC1OHY	KC1TTS	KC1VNA	KI4VWT	N1JAF	W1CJV	WA2KRS
AC1BG	K1VK	KB1WAM	KC1OMF	KC1TXH	KC1VPI	KK1RZ	N1JIW	W1DM	WB1AAT
AC1NY	K1WZC	KB1WMC	KC1OXG	KC1TXO	KC1VPU	KM6NUY	N1JSM	W1DYJ	WB1CAN
AD1UP	K1YSO	KB1ZJS	KC1PBJ	KC1TYH	KC1VPY	KO1MAN	N1JWM	W1ENB	WB1EMS
AE1JR	K2VUD	KB3ZOO	KC1PFS	KC1UEF	KC1VQK	KQ1TRN	N1KLF	W1EP	WB2OSY
AF1R	K3FG	KC1AHM	KC1POQ	KC1UEU	KC1VQT	KQ1V	N1KUG	W1GMM	WB4EJR
AJ1L	K4EGP	KC1APU	KC1POR	KC1UFL	KC1VQU	KS1E	N1LKS	W1HAI	WB7VNZ
GILLHAM	K5SCG	KC1CLA	KC1PWO	KC1UFQ	KC1VQV	KT1OK	N1LWK	W1HFP	WE1I
K1ALL	K5TEC	KC1DD	KC1QFD	KC1UIH	KC1VUX	KV1GS	N1MSK	W1JDZ	WE5SST
K1BC	K8ZBE	KC1DMM	KC1QMC	KC1UMC	KC1VVS	KW1CDR	N1NOM	W1JVC	WG1V
K1BOS	KA1GDQ	KC1ECD	KC1RMD	KC1UML	KC1VXV	KW1U	N1NVJ	W1LPG	WI1RED
K1BTZ	KA1GFN	KC1FEH	KC1RSV	KC1UMM	KC1VYF	KW1W	N1OSI	W1LSV	WM1T
K1BUN	KA1JMC	KC1GAU	KC1RVT	KC1UMQ	KC1VYI	KX1M	N1OZQ	W1MJ	WN9T
K1CPD	KA1JXY	KC1HCQ	KC1RVU	KC1UMW	KC1VYX	KZ1CY	N1QD	W1MVP	WO1E
K1CPR	KA1MAT	KC1HNG	KC1RVW	KC1UQU	KC1VZH	N0LOU	N1QPR	W1MWS	WRKN523
K1DGG	KA1MOM	KC1HPZ	KC1RWH	KC1URH	KC1VZJ	N1AUN	N1STE	W1NGS	WU2C
K1DRD	KA1SC	KC1IUN	KC1SGF	KC1URR	KC1WFS	N1AYC	N1TMK	W1NI	WW1U
K1DSL	KA1SOL	KC1IUS	KC1SJB	KC1URV	KC1WGK	N1BE	N1UIO	W1NTS	WZ1KD
K1ENB	KA1TW	KC1JRN	KC1SJK	KC1US	KC1WIC	N1BGK	N1WEN	W1NZJ	
K1HGT	KA2CNN	KC1JUO	KC1SLQ	KC1UWJ	KC1WIH	N1CEO	N1XZI	W1ORD	
K1IW	KA8SCP	KC1JYJ	KC1SMQ	KC1VDP	KC1WLO	N1CPE	N1ZYY	W1SHS	
K1IX	KB1DY	KC1JZH	KC1SO	KC1VEB	KC1WMW	N1CVO	N9JBT	W1USN	
K1JOA	KB1ENV	KC1KGS	KC1SOG	KC1VER	KC1WOK	N1DAM	NA1CL	W2JIG	
K1JSM	KB1HCT	KC1KVY	KC1SOZ	KC1VHA	KC3OFA	N1DCH	NB1M	W3EVE	
K1JTO	KB1JKJ	KC1KZF	KC1SUY	KC1VHB	KC4BFD	N1DDK	NE1AB	W4HIX	

Upcoming MMRA Meetings

Meetings usually start at 7:30 PM

Meeting locations and times are subject to change.

Consult the MMRA website for the most up-to-date information.

**ZOOM Teleconference login info is available
once you log into your account on MMRA.ORG**

Non-members: if you wish to attend, email contact@mmra.org.

Elmer Forums / ZOOM: 5/14, 6/11

Business Meetings / ZOOM: 6/18, 10/15, 12/17, 2/18, 4/15

May 21, 2025 Annual Meeting & Elections
Speaker: Anthony Luscre - K8ZT: *10 Worst Antennas for
Amateur Radio & How You Can Do Better!*

Location: New England Sci-Tech + ZOOM

August 24, 2025 HamXposition NOON
Introduction to MMRA and Raffle

September 17, 2025 Membership Meeting
Speaker: Anthony Luscre - K8ZT: *Technicians, Life
Beyond Repeaters*

Location: New England Sci-Tech + ZOOM

November 19, 2025 Membership Meeting
Speaker: Larry Banks— W1DYJ: *Antenna Modeling
Part 1— EZNEC*

Location: Marlborough Central Fire Station + Zoom

January 21, 2026 Membership Meeting
Speaker: Charles Bures - WA3TR: *Introduction to IT-65
& WSPR*

Location: NE Sci-Tech + Zoom

March 18, 2026 Membership Meeting .
Speaker: George Allison - K1IG: *How to Precisely
Calibrate Your Transceiver*

Location: NE Sci-Tech + Zoom

May 20, 2026 Annual Meeting & Elections
Speaker: David Kula - KC1VZH: *A Technician's Journey:
From HT to HF*

Location: TBA

Join Us! Every Tuesday @ 8 PM Technical, Informational and Other Stuff Net

Keep up with what's happening in the MMRA and ask your
ham related questions.

Net Control Operators:

Week 1	W1DYJ	Larry Banks
Week 2	K1BTZ	Jonathan Traum
Week 3	K1KWP	Kevin Paetzold
Week 4	KC1VZH	David Kula
Week 5	KB1OQA	Tom Turner

To connect using Echolink: Conference *NEW-ENG2*

**NOTE: we need another NC to be available as a substitute. If
you are interested, email W1DYJ@mmra.org**

MMRA Leaders

Executive Board — Officers

President	Dave Hornbaker	N1DCH
Vice President	John Spencer	WA1MDD
Secretary	Ken Horton,	KA1GFN
Treasurer	Kevin Paetzold	K1KWP
Clerk	Stephen Babbitt	KC1LPZ

Executive Board — Directors

Director >2025	Bob DeMattia	K1IW
Director >2025	Roger Coulson	WA1NVC
Director >2026	Rob Evans	N1BE
Director >2026	James Lee	N1DDK

Appointed, Voting

Technical Officer Bob DeMattia K1IW

Repeater Trustees

Billerica 147.12	Mike Rioux	W1USN
Billerica 224.88	Bruce Pigott	KC1US
Boston 146.82	John Mullaney	K1BOS
Boston 927.0625	Rick Zach	KK1RZ
Brookline 145.16	Joyce DeMattia	K1MRA
Burlington 145.43	Ed Curley	KC1CLA
Hopkinton 447.775	Bryan Cerqua	W1BRI
Lowell 442.25	Bob Phinney	K5TEC
Marlborough 53.81	Bryan Cerqua	W1BRI
Marlborough: 29.68, 144.39, 147.27, 223.94, 224.70 449.575, 449.925, 927.70		
all as W1MRA	Bill Northup	N1QPR
Mendon 146.61	Kevin Paetzold	K1KWP
N. Reading 146.715	Bruce Pigott	KC1US
N. Reading 446.775	Larry Banks	W1DYJ
Quincy 224.40	Bill Dunn	N1KUG
Quincy 146.67	Bryan Cerqua	W1BRI
Weston 146.79	Joe Weisse	W1HAI
Weston 224.70	Bill Northup	W1MRA
Weston 442.70	Dave Hornbaker	N1DCH

Additional, non-Voting

Newsletter Editor	Larry Banks	W1DYJ
Emerg. Coord.	Kevin Paetzold	K1KWP
Pub. Serv. Coord.	Bruce Pigott	KC1US
VEC Liaison	Ron Rothman	WO1E
Net Manager	Larry Banks	W1DYJ
Web Page Editor	Bob DeMattia	K1IW

President Emeritus

Bob DeMattia K1IW

Technical Officer Emeritus

Bryan Cerqua W1BRI

About the Minuteman Repeater Association

MMRA Control Operators Responsibilities

<https://www.mmra.org/MMRACOPolicy-March2019.pdf>

The Minuteman Repeater Association (MMRA) is dedicated to Amateur Radio and public service. The MMRA maintains a large system of repeaters in Eastern Massachusetts.

The MMRA meets each month from September to June. Meeting times, locations, and talk-in frequency vary and are announced in this newsletter and on weekly nets. Meetings are open to all interested parties. Guest speakers and programs of general interest occur in September, November, January, March, and May. The intervening meetings are also open to all members and are for general business.

The Minuteman newsletter is emailed one week before each general interest meeting. Members are encouraged to submit articles: send to the editor at newsletter@mmra.org. The deadline for articles is the last Friday of the month preceding the meeting.

Each Tuesday evening at 8pm the MMRA links most of the repeaters for an open net. The topic is "Technical Information and Other Stuff". Join us!

Membership in the MMRA is open to all radio amateurs. Annual dues are \$25 per individual or \$35 per family. See our website for details.

Contact information is listed on the top of the last page of this newsletter.

MMRA QRM Policy

MMRA members and all other operators are strongly encouraged to report repeater activity that does not abide by Part 97 rules or accepted amateur radio practice to the board of directors at contact@mmra.org or via other means.

The most effective way (and probably the only effective way) to deal with an individual causing QRM is to NOT engage with that individual on the air. Please include the time and date of any incident.

Repeater and Frequency Information

Band	XMTR Location	Freq	PL	Call	Linking To:	
					Hub 1	Hub 2
10m	Marlboro East	29.680	131.8	W1MRA	???	???
Linked to 146.79: 9am-3pm every day						
6m	Marlboro East	53.810	71.9	W1BRI	PTL	PTL
Remote receive Marlboro West: PL=100						
2m	Brookline	145.160	na	K1MRA	D-Star (REF050C)	
	Burlington	145.430	146.2	KC1CLA	FTL	PTL
	Mendon	146.610		K1KWP	FTL	PTL
	Quincy	146.670		W1BRI	FTL	PTL
	North Reading	146.715		KC1US	FTL	PTL
	Weston	146.790		W1HAI	PTL	PTL
				Linked to 29.68: 9am-3pm every day		
	Boston	146.820		K1BOS	FTL	PTL
	Billerica	147.120		W1DC	PTL	PTL
	Output tone = 162.2			W1MRA	PTL	PTL
Marlborough	147.270					
1.25m	Marlborough	223.940	103.5	W1MRA	FTL	PTL
	Quincy	224.400		N1KUG	FTL	PTL
	Weston	224.700		W1MRA	PTL	PTL
	Billerica	224.880		KC1US	FTL	PTL
70cm	Lowell	442.250	88.5	K5TEC	FTL	PTL: 446.775
	Weston *	442.700	88.5	N1DCH	Network Hub 2 (PTL to Hub 1)	
	North Reading System Fusion	446.775	88.5 71.9 Local Link	W1DYJ	FTL [88.5]	PTL [88.5]
	Hopkinton System Fusion	447.775	88.5 71.9 Local Link	W1BRI	FTL [88.5]	PTL [88.5]
	Marlborough	449.575	na	W1MRA	D-Star (REF050C)	
	Marlborough *	449.925	88.5	W1MRA	Network Hub 1	
33cm	Boston *	927.0625	D244	KK1RZ	PTL	PTL
	Marlborough *	927.700		W1MRA	PTL	PTL
PL out = 131.8						

Marlborough 144.390 none W1MRA APRS Digipeater

??? 145.630 146.2 W1MRA Fox Box

*Internet	HUB1- 449.925: IRLP node 4133 / Echolink node 4133 Connected to Echolink NEWENG2 conference (9127) for TIAOS net.	
	HUB2 - 442.700: IRLP node 4136 / Echolink node 4136 Connected to 220 Reflector 9124 on Tuesdays	
	927.0625: IRLP 4977	Normally linked to the NE900 Reflector, 9125. Linked to MMRA via "NEW-ENG2" node 9127 for the TIAOS net. Normally linked together.
	927.700: IRLP 4978	

Notes: FTL = Full Time Linked (or default state)

PTL = Part Time Linked (on schedule or demand)

A repeater can be linked to only one Hub at a time, however the two hubs can also be linked together.

Contacting the MMRA



Members: join mmra@groups.io

to receive member emails.

You must be approved by the moderator.

Officers: contact@mmra.org

Control Ops: control-ops@mmra.org



<http://www.mmra.org/>



<https://www.facebook.com/mmraham>

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<https://creativecommons.org/licenses/by/4.0/>

MMRA Amateur Radio Exam Sessions

Check out <https://www.mmra.org/exam.html> or email ve@mmra.org

Ask your friends to become a member Just let them know that it is not fully automated. Although they can log into the MMRA website immediately, they need to be manually processed. This could take up to a week.

If you haven't updated your MMRA profile in a while, now is the time! Log into < [MMRA.ORG](http://www.mmra.org) > to do so.

Previous issues of the MMRA Newsletter are available at: [MMRA Newsletter Archive](#).

They are also available at DLARC: <https://archive.org/details/minuteman-repeater-association>

Nets, etc., on the MMRA System

MMRA Technical Information and Other Stuff Net

Our weekly club net on most of the MMRA repeaters, Tuesday night at 8:00 pm local.

Heavy Hitters Traffic Net

This ARRL NTS net is active on our repeaters Sunday to Friday evenings from 9:45—11 PM and Saturday from 10-11.

Coast Guard Net

Sundays at 11:00 AM local.

ARES Net

First Monday at 8:30 PM local.

ARRL Audio News

Sundays at 7 PM local

< https://www.mmra.org/repeaters/repeater_linking.html >



NEW ENGLAND SCI-TECH

New England Sci-Tech Inc is a new 501(c)(3) STEM education center, amateur radio training center, and maker space located at 16 Tech Circle, Natick. It is home to New England Amateur Radio Inc (NE1AR) and the youth radio club Sci-Tech Amateur Radio Society (STARS). NE Sci-Tech welcomes memberships and donations via www.NESciTech.org or www.NE1AR.org.

Get connected on the MMRA Repeater System ~ Dave Hornbaker N1DCH

What is the best way to get connected on the MMRA repeater system? Try announcing yourself! Just say your call sign followed by "listening". If you want, you can include the last 3 digits of the repeater frequency. For example, "N1DCH listening" or maybe "N1DCH listening on 925", you may very well get a response. Try to connect by announcing yourself several times.

Most of the time, Marlborough Hub1 (449.925) is linked to the following repeaters, Boston (146.820), North Reading (446.775 and 146.715), Mendon (146.610), Lowell (442.250), Hopkinton (448.225) and Quincy (146.67.) Remember that when the repeaters are linked, you need to wait two or three seconds after you key up and before you speak. This is especially important on the TlaOS net on Tuesday when most of the repeaters are linked.

You can also link (and delink) the repeaters yourself. See the information you received when you became a member, or check the [User Control Codes](#) once you log into the MMRA website.

Try one of the non-linked repeaters too. There are Hams monitoring them as well. For more information on the repeater network and how it is linked at various times, check out https://mmra.org/repeaters/repeater_linking.html.